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What is Diabetes?

Diabetes. It is a serious disorder that can lead to blindness, amputation, kidney failure, stroke and heart attacks. Most often caused by the inability of the body to make or properly use insulin, diabetes affects the way your body uses sugars (fruits and vegetables), starches (breads and cereals), and how other foods are broken down into energy. It is estimated that over 900,000 individuals have diabetes in the state of Texas.

TYPES OF DIABETES

There are 2 major types of diabetes.



- Was known as Insulin Dependent Diabetes (IDDM) or Juvenile Onset.
- Accounts for less than 10% of all diagnosed cases of diabetes.
- Causes the body to produce little or no insulin. The person with type 1 diabetes must use insulin daily to remain healthy.
- Is usually diagnosed in people under the age of 20, but it can occur at any age.
- Does not usually run in families.
- Usually occurs in thin to normal weight individuals.
- Increases the risk of ketosis.



- Was known as Non-insulin Dependent Diabetes (NIDDM) or Adult Onset.
- Accounts for over 90% of all diagnosed cases of diabetes.
- In many cases, people will have high levels of insulin at diagnosis, but it can occur in people with normal or low levels of insulin.
- Is usually diagnosed in people over 30 years of age, but is being found more frequently in children, adolescents and young adults.
- Tends to run in families.
- Usually occurs in overweight individuals.
- Increases risk for high blood pressure and high cholesterol.

RISK FACTORS

1. Overweight – $\geq 120\%$ of ideal body weight or a body mass index (BMI) $\geq 27 \text{ kg/m}^2$
2. Family history of Diabetes Mellitus (DM)
3. Hispanic, African American or Native American origin
4. Over 30 years of age
5. Prior history of large babies or diabetes during pregnancy (gestational diabetes)
6. Sedentary lifestyle

WARNING SIGNS OF DIABETES

1. Excessive thirst or hunger
2. Frequent urination
3. Extreme weakness or fatigue
4. Cuts or sores that are slow to heal
5. Blurred vision
6. Tingling or numbness of the feet or hands
7. Frequent urinary or vaginal infections in women
8. Impotence
9. Acanthosis Nigricans – a darkened pigmentation of the skin folds, i.e., neck, elbows, behind the knees, or the groin areas

PREVENTION OF DIABETES

1. You should be tested if two or more risk factors are present.
2. Try to be more active.
 - a. Find things you enjoy doing, such as walking, dancing, gardening, or bicycling.
 - b. Make time to do something active and fun.
 - c. Activity should be done regularly, for at least 30 minutes four times a week.
3. Develop healthy eating habits.
 - a. Reduce fats, such as lard and shortening.
 - b. Cook with vegetable oils.
 - c. Use low-fat cooking methods such as broiling and steaming.
 - d. Trim fat and skin from meats.
 - e. Eat smaller portions.
 - f. Choose foods high in fiber, such as fruits, raw vegetables, beans, peas, and whole grains.
 - g. Eat well balanced meals about the same time each day.
4. Be alert for signs and symptoms of diabetes. Notify the doctor if they occur.

¿Qué es la Diabetes?

Con frecuencia a la diabetes se le llama la "enfermedad del azúcar". Es una enfermedad seria que puede causar ceguera, amputaciones, falla renal, derrames cerebrales, y ataques al corazón. En la mayoría de los casos es causada por la falta de capacidad del cuerpo de fabricar o usar la insulina en forma apropiada. La diabetes afecta la manera en que el cuerpo transforma en energía a los azúcares (en las frutas y vegetales), los almidones (en los granos y cereales), y otros alimentos. Se calcula que aproximadamente 900,000 personas tienen diabetes en el estado de Texas, especialmente en las regiones del sur.

TIPOS DE DIABETES

Hay dos tipos principales de diabetes.

Diabetes de tipo 1:

- Era conocida como diabetes dependiente de insulina, o diabetes juvenil
- Constituye menos del 10% de todos los casos de diabetes diagnosticados
- Causa que el cuerpo produzca muy poca o ninguna insulina. La persona que tiene diabetes de tipo 1 tiene que usar insulina diariamente para mantenerse sano.
- Se diagnostica en la gente de menos de 20 años, pero puede ocurrir a cualquier edad
- En general, no afecta a muchas personas en la misma familia
- En general aparece en individuos que son delgados o de peso normal
- Aumenta el riesgo de quetosis

Diabetes de tipo 2:

- Conocida como diabetes no dependiente de insulina, o diabetes adulta
- Constituye más de 90% de todos los casos de diabetes diagnosticados
- En muchos casos, la gente tiene niveles altos de insulina cuando se diagnostica, pero puede ocurrir en personas con niveles normales o bajos de insulina.
- En general se diagnostica en gente de más de 40 años, pero se encuentra con más frecuencia en niños, adolescentes, y adultos jóvenes.
- Tiende a afectar a personas en la misma familia.
- En general aparece en individuos con sobre peso.
- Aumenta el riesgo para la alta presión arterial y el colesterol alto.

FACTORES DE RIESGO

1. Obesidad – $\geq 120\%$ del peso ideal o un índice de masa $\geq 27\text{kg}/\text{m}^2$
2. Historia en la familia de diabetes mellitus
3. Origen hispano, afro-americano, o indio nativo americano
4. Mayor de 40 años
5. Tener una historia de dar luz a bebés grandes o de tener diabetes durante el embarazo (diabetes gestacional)
6. Estilo de vida sedentaria

SEÑALES DE PELIGRO PARA LA DIABETES

1. Sed o hambre excesiva
2. Necesidad de orinar con mucha frecuencia
3. Gran debilidad o fatiga
4. Cortaduras o lastimaduras que se curan muy lentamente
5. Visión borrosa
6. Cosquilleos o falta de sensibilidad en los pies o las manos
7. En las mujeres, infecciones urinarias o vaginales frecuentes
8. Impotencia
9. Acanthosis Nigricans – pigmentación oscura de los pliegues de la piel como el cuello, los codos, detrás de las rodillas, o el área genital

PREVENCIÓN DE LA DIABETES

1. Usted debe hacerse un examen si presentan 2 o más de los factores de riesgo.
2. Trate de hacer más actividad física.
 - a. Haga actividades que disfruta, como caminar, bailar, trabajar en el jardín, o andar en bicicleta.
 - b. Encuentre el tiempo para hacer una actividad física divertida.
 - c. Debe hacer actividad física regularmente, por lo menos por 30 minutos, cuatro veces por semana.
3. Es importante tener hábitos de comer saludables
 - a. Coma menos grasas como manteca y grasa vegetal
 - b. Cocine con aceites de vegetal
 - c. Cocine con métodos que usan poca grasa, como cocinar al horno y al vapor
 - d. Quite la grasa y la piel de las carnes
 - e. Coma porciones más pequeñas
 - f. Elija comidas altas en fibra como frutas, vegetales crudos, frijoles y chícharos, y granos integrales
 - g. Coma comidas bien balanceadas a aproximadamente la misma hora todos los días
4. Esté alerta a las señales y los síntomas de la diabetes. Llame al doctor si se presentan.

Types of Diabetes

A. Type 1 – Previously called IDDM or Juvenile Diabetes

1. Accounts for approximately 10% of diabetes.
2. Must take injected insulin to live.
3. Pancreas produces little or no insulin.

Absolute insulin deficiency

4. Usually develops in individuals before the age of 20.
5. Typically onset in children is acute and dramatic with frequent urination, thirst, extreme hunger and fatigue, rapid weight loss, and profoundly elevated glucose levels.

Onset of symptoms in adults is more gradual, often being mistaken for type 2 diabetes.

6. If untreated, can progress to ketoacidosis and coma.
7. Risk Factors
 - a. Autoimmune disease. Islet Cell Antibodies (ICA) destroy the beta cells of the pancreas and are often present at time of diagnosis.
 - b. Genetic predisposition. Over 90% of Caucasians with type 1 are haplotype DR3 and/or DR4 positive on genetic testing.
 - c. Environmental factors, i.e., viruses and unidentified factors.

B. Type 2 – Previously called NIDDM or Adult Onset

1. Accounts for approximately 90% of people with diabetes.
2. Treatment is highly individualized, requiring dietary modification, exercise, lifestyle changes, medication, or a combination of all these items.
3. Usually has gradual onset.
4. Occurs more frequently after the age of 30.
5. 80 to 90% of individuals are overweight.
6. Individual may present with few or no symptoms.
7. May range from predominately insulin resistance with relative insulin deficiency to a predominantly secretory defect with insulin resistance.

8. Coexistence of three major metabolic abnormalities
 - a. Peripheral insulin resistance
 - b. Increased basal hepatic glucose production
 - c. Impaired insulin secretion
9. Risk Factors
 - a. Overweight – $\geq 120\%$ of ideal body weight or a Body Mass Index (BMI) $\geq 27 \text{ kg/m}^2$
 - b. Family history of DM
 - c. Hispanic, African American or Native American origin
 - d. Over 30 years of age
 - e. Prior history of large babies or diabetes during pregnancy (gestational diabetes)
 - f. Sedentary lifestyle
 - g. High blood pressure
 - h. High Density Lipoprotein Cholesterol (HDL) cholesterol $\leq 35 \text{ mg/dl}$ and/or triglycerides $\geq 250 \text{ mg/dl}$.

C. Gestational Diabetes – GDM

1. Develops in 2 to 5% of all pregnancies.
2. Usually goes away immediately after delivery of the baby.
3. Associated with an increased risk of type 2 diabetes later in life.
(Some studies say up to 50% incidence.)
4. Risk Factors
 - a. African American, Hispanic/Latino American, and American Indian origin
 - b. Family history of diabetes
 - c. Obesity

D. Other causes

1. Results from specific genetic syndromes, surgery, drugs, malnutrition, infections, and other illnesses.
2. Accounts for 1 to 2% of all diagnosed cases of diabetes.

E. Impaired Fasting Glucose

1. Fasting glucose ≥ 110 mg/dl but ≤ 126 mg/dl.

F. Impaired Glucose Tolerance

1. Oral glucose tolerance test value of ≥ 140 mg/dl but ≤ 200 mg/dl.

G. Insulin Resistance

1. Condition in which blood glucose levels are still within normal ranges, but insulin levels may be 2–3 times higher than normal.
2. Currently thought to progress to type 2 diabetes and increase cardiovascular risk.
3. Conditions in which insulin resistance occurs
 - a. Type 2 diabetes
 - b. Obesity
 - c. Late pregnancy
 - d. Stress
 - major trauma
 - surgery
 - critical illness
 - e. Diabetic ketoacidosis
 - f. Generalized acanthosis nigricans

Facts about Diabetes

- A. Diabetes is a chronic disease.
- B. Diabetes affects 16 million people in the U.S., 1/3 of whom do not know it.
- C. Diabetes affects 865,000 Texans and 120,000+ people in Bexar County.
- D. People with diabetes are:
 - 1. 17 times more prone to kidney disease;
 - 2. 25 times more prone to eye disease;
 - 3. 15–20 times more prone to lower limb amputation;
 - 3. 2–6 times more prone to heart disease or stroke.
- E. Prevalence of diabetes by age
 - 1. Age 65 or older – 18.4 % of all people in this age group have diabetes.
 - 2. Age 20 or older – 8.2 % of all people in this age group have diabetes.
 - 3. Under age 20 – 0.16 % of all people in this age group have diabetes.
- F. Prevalence of diabetes by race/ethnicity in people 20 years or older (1995 statistics)
 - 1. Non-Hispanic whites..... 7.8%
 - 2. Non-Hispanic blacks 10.8%
 - 3. Mexican Americans 10.6%
 - 4. American Indians and Alaska Natives – prevalence varies among tribes, bands, pueblos, and villages – ranges from less than 5% to 50% for diagnosed diabetes.
 - 5. Asian American and Pacific Islanders – prevalence data is limited. Data collected from 1988 to 1995 suggests that Native Hawaiians are twice as likely to have diagnosed diabetes as white residents of Hawaii.
- G. In 1994, Texans paid \$9 billion for diabetes care.
 - 1. \$1.6 billion in medical costs which includes Medicaid and other state programs aimed at diabetes education and detection.
 - 2. \$2.4 billion in indirect costs – lost wages and early death.